



AEC-NASA TECH BRIEF



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Graphic Visualization of Program Performance Aids Management Review

The problem:

Schedule reporting using PERT computerized printouts is often unsuitable for rapid and visual review by top management. It was desirable to develop a visual display to illustrate the impact of critical items and their path, showing their net effect on the program objectives.

The solution:

Creation of a chart technique (PERTREE) which displays the essential status elements of a PERT system in a vertical flow array, of high graphic quality.

How it's done:

A typical PERTREE is shown in the sketch. Critical item events have been selected to cover all the major paths leading to the program objectives. Current status information is obtained from standard PERT printouts. By orienting this summarized network in a vertical display, it is possible to combine the benefits of "waterfall" schedule sequences to the PERT generated status data. The PERT latest allowable schedule for each subassembly, activity, or other type element of the program is directly connected by tie-line to the PERTREE events. Current PERT status vs. this latest allowable schedule is readily visualized by Gantt-type bars constructed to display an on-time, ahead, or behind-schedule status. Columns are added at the outer edges of the display to offer exact dates of schedule and expected times, as well as a slack readout. Since the PERTREE points up interfacing, sequential and parallel operations, the impact of lateness of one operation is readily apparent in its effects on others. A "time-now" line on each time-calendar aids in orientation to the immediacy or remoteness of event occurrences.

Notes:

1. An additional benefit of the vertical PERTREE orientation compared to the usual horizontal network is its ability to provide separation of the

net as desired by the developer. In some instances, it serves a useful purpose by separating prime contractor or "own" responsibilities from those of subcontractors or "others". On another occasion, it may be desirable to show primary operations on one side of the PERTREE, thereby interlocked within one waterfall, while keeping interfacing or support-type operations on the other side.

2. Since the display is versatile, it can accommodate any aspect of the program which the presenter wishes to accent. Known problem areas may be branched into greater detail than areas of lesser importance. Sub-PERTREE's may also be developed to support any one, or several, of the events within a master PERTREE.
3. Once constructed, maintenance is simple. New data may be displayed rapidly and changes in logic readily applied, while maintaining a standard graphic aid familiar to an oriented management group.
4. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
AEC-NASA Space Nuclear Propulsion
Office
U.S. Atomic Energy Commission
Washington, D.C. 20545
Reference: B67-10568

Patent status:

No patent action is contemplated by AEC or NASA.

Source: G. N. Eisenhart
of Aerojet-General Corporation
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AEC-NASA Space Nuclear Propulsion Office
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(continued overleaf)

PERTREE

FOR

EXPERIMENTAL NUCLEAR ENGINE

